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SECTION 3.4 - NOISE AND VIBRATION

Noise

The analysis of noise and vibration impacts contained in the EIR/EIS omits important analysis and contains inconsistencies that compromise the integrity of the conclusions. In addition, the analysis lacks information on the extent of the impacts for *mitigated alternatives* while mitigation for the proposed project is described in generic terms. No substantive analysis is provided in the EIR/EIS that allows for comparison of impacts between alignments.

Limitations of the Noise Analysis in Support of the Draft EIR/EIS for HSR System Route Selection

Method and Criteria for Evaluation of Impacts

The method and criteria used for evaluating noise and vibration is based upon procedures in two documents prepared by the U.S. Department of Transportation (USDOT):

1. Federal Railroad Administration, "High-Speed Ground Transportation Noise and Vibration Assessment, Final Draft," December 1998.
2. Federal Transit Administration, "Transit Noise and Vibration Impact Assessment," April 1995.

The two USDOT publications use the same noise impact criteria and application method. These criteria use Ldn to quantify the noise environment of residential communities, including hospitals and hotels.² The noisiest hour $L_{eq}(h)$ is used to evaluate other land use categories.³ The use of Ldn and L_{eq} to evaluate environmental noise impacts is the accepted standard for rail projects.

These criteria utilize existing estimates of community noise in the determination of noise impact in that the analysis uses both the noise from project sources and the relative difference between the project noise and the existing ambient noise level. The criteria use three regions of effect: No Impact, Impact, and Severe Impact. For higher existing noise environments the allowable increase in the cumulative noise is decreased. For noise environments where the existing Ldn is less than 55 dBA, the project noise may be higher than existing noise environments and where the noise environment is greater than 55 dBA the project noise must be less than existing noise.

² Day-Night Average Sound Level (L_{dn}) - Ten times the logarithm to the base 10 of the ratio of the *day-night average sound pressure* to the reference sound pressure of 20 micropascals. The *day-night average sound pressure* exposure is defined for a 24-hour calendar day and calculated by adding the sound exposure during the daytime (0700 to 2200 hours) to 10 times the sound exposure obtained during the nighttime (2200 to 0700 hours).

³ Equivalent Sound Level (L_{eq}) - The equivalent sound level, L_{eq} is the level of a constant sound which, in the given situation and time period, has the same sound energy as does a time-varying sound. Technically, equivalent sound level is the level of the time-weighted, mean, square, A-weighted sound pressure. The time interval over which the measurement is taken should always be specified.

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These criteria, however, were never applied directly in the analysis. Instead, screening distances that are presented in the FRA and FTA documents were utilized to define regions of potential impact. These screening distances were categorized by train speed (indicates how much noise is produced), type of corridor (an indication of existing noise environment) and land use (an indication of existing noise environment).

In order to assess the validity of using these screening distances the report performed "typology" evaluations for eleven locations between the Bakersfield and Sylmar stations within screening distances between 50 and 900 feet. The report estimated ambient noise levels to be between 50 and 62 dBA. The analysis found "significant impact" at all locations.

The number of people potentially impacted may be underestimated since "Significant Impact" is 5 dB above the threshold of "Impact" and, therefore, screening distance may not be adequate to include all populations that are "Impacted." It is difficult to determine if this would bias one alignment over the other.

It is not clear how the HST impact criteria, which uses a sliding scale depending upon ambient noise, can be compared to airport impacts that use a single number of Ldn 65 dBA to define populations impacted.

The method of quantifying potential noise impacts from highways was not explained sufficiently to be able to evaluate the adequacy of the numbers that were presented in the technical report.

Vibration

The two USDOT publications use the same vibration impact criteria and application method. These criteria use ground-borne vibration levels (VdB) and ground-borne noise levels (dBA) to evaluate vibration impact on land use categories.

The use of VdB and dBA to evaluate vibration impacts is the accepted standard for rail projects. These criteria use absolute values of vibration and ground-borne noise to assess impacts for three land use categories. The values listed in the HST documents correspond to those in the USDOT documents.

However, these criteria are never applied directly. Screening distances developed by FRA and FTA for two speed ranges, < 100 mph and 100 to 200 mph, (labeled as < 125 mph and ≥ 125 mph in the HST documents) were used to define regions of potential impact. The amount of ground-borne vibration goes up 6 VdB with a doubling of speed (FRA, p. 8-7) and goes down approximately 7 VdB for each doubling of distance (FRA, p. 8-4). Consequently the use of screening distances may under or over estimate the area of effect depending upon the speed of the train, and depending upon how different the operating

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speeds are from the average in these ranges. Screening distances may be too large near stations where the speeds would be lower, and too small where trains operate at the rated speed. It is difficult to determine if this limitation would bias one alignment over another.

The FRA document directs that the analysis move from the “screening analysis” to the “general assessment” if one or more of the noise sensitive land uses are within the screening distances. According to the noise report this analysis would trigger a “Tier 2 Analysis” once the HST system is approved.

Deficiencies of the Bakersfield to Sylmar HSR Route Alignment Evaluations and Impact Comparisons

In order to compare alternatives, the HST report introduced the concept of “Impact Metric” (IM) to estimate the number of people per mile impacted. The IM uses the screening distances, land use designation, and the corresponding population density to estimate the number of residences. The analysis used a GIS database containing 2 Anderson Land Use categories: 11 (residential) and 16 (mixed use). The number of schools and hospitals within the screening distances were also identified. Parkland and hotels were excluded in the IM scheme.

The population density contained in the GIS database was not available for review. The accuracy and applicability to the range of land uses along the alternative corridors is unknown.

The IM weighted these numbers as shown below:

Description	Weighting	Result of Weighting
Residential	1	Number of people
Mixed Use	0.3	30% of population residential
Hospitals	100	100 persons per hospital
Schools	250	250 persons per school

The IM uses people per mile inside the screening distance. It is difficult to understand how using number-impacted-per-mile to compare with other modal systems such as airports, where at best one would use impacts per square mile, is appropriate. In addition, use of a “density” in either case can hide information on the total population impacted. The total number of people potentially impacted by each alternative should be the base for evaluating alternative corridors and the alternatives to the project.

Once the number of people impacted per mile (IM) was determined for each segment, an Impact Rating scheme (IR) for both noise and vibration was used to assign a High, Medium, or Low impact for that segment. The IR assignment method is summarized in the table below:

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IR	Noise	Vibration
High	IM > 200	IM > 100
Medium	80 < IM < 200	40 < IM < 100
Low	IM < 80	IM < 40

The necessity of this scheme is not clear nor is its application. There is no justification for the assertion that to get the same rating, twice as many people must be impacted by noise as by vibration.

The IM and IR schemes disguise the magnitude of the impacts. The comparison should be “Number of People Impacted” by either noise or vibration, not number per mile. In contrast, the total impacted population of the other modes of transportation can be quickly compared. That analysis does quantify the potential number of people impacted by noise and vibration.

The IR scheme was applied to sections of each corridor rather than to an entire corridor. The only justification for a “High,” “Medium,” or “Low” qualitative assessment would be in comparing alternative alignments, however, not sections within an alignment.

The introduction of the “Impact Metric” and “Impact Rating” schemes is neither appropriate nor supported by the USDOT procedures.

The population potentially impacted is addressed in Table 4.5.1, Table 5.5.1, and the tables in Appendix A of the noise report, pages A-1 to A-7. Unfortunately the populations presented in these tables for the alternative routes between Bakersfield and Sylmar do not agree:

Alternative	Noise			Vibration		
	Table 4.5.1	A-1	A-6	Table 5.5.1	A-3	A-8
Union Ave + Tehachapi	1153	853	1153	654	354	654
Wheeler Ridge + Tehachapi	1418	1268	1418	199	199	199
SR-58 + Soledad Canyon	477	613	477	240	238	240

Some of the disagreement is whether or not three buildings were either schools or hospitals. Section 3.4 of the EIR/EIS identifies them as schools.

There also seems to be an error in counting residential populations along the alignments. For noise, the range of screening distances for residential land uses is 375 to 900 feet, whereas for vibration it is 200 to 220 feet. Therefore, the number of residents potentially impacted by noise should always be greater than or equal to the number impacted by vibration. However, comparing the tables on page A-1 and A-3 of

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the technical report, two segments (I-5: Tehachapi Corridor and SR-58 Corridor) have more residents identified as potentially impacted for vibration than for noise:

Alignment	People Impacted by Noise (A-1)	People Impacted by Vibration (A-3)
I-5: Tehachapi Corridor	70	109
SR-58 Corridor	40	118

The reported numbers of people impacted by noise and vibration are inconsistent with the screening distances. The conclusions regarding corridor comparisons may not be valid.

Failure to Disclose Potential Effects on Biological Resources

Operation of the rail line would generate noise levels in excess of 90 dB (A) when operating at velocity. While noise is generated by a variety of sources including wheel/rail interaction and motors/gears, the primary source is unsteady airflow that creates aerodynamic noise. The EIR/EIS fails to address potential impacts to biological resources known to occur in the Tehachapi Mountains despite the amount of literature that clearly establishes a link between noise levels and the integrity of habitat. This is a deficiency that must be addressed.

For example, in his article "Niche Hypothesis," Bernard Krause suggests that every creature has an "aural niche" or its own particular voice and specific place in a habitat based on the relative frequency, amplitude, timbre, and duration of the sound it produces. Taken together, the vocalizations of all the creatures in a given habitat zone produce a unique vocal fingerprint which Krause believes can be used to infer the biological integrity of the area. With increasing destruction and loss of habitat, many creatures are forced into different areas with consequently different aural zones in which they lack an established niche. The inability of creatures to successfully communicate or otherwise employ their auditory senses is detrimental to the long-term survival of these displaced creatures and the overall biological integrity of the environment. Krause thus argues that in natural areas "...the sounds of each of these zones are so unique and important to creature life in a given location..." that disturbance to this soundscape could be detrimental to the future of the individuals, populations or entire species (Krause, 1993).

Harrington and Veitch published "Short Term Impacts of Low-level Jet Fighter Training on Caribou in Labrador" in December of 1991 at the conclusion of their 1986-1988 studies of Rangifer tarandus. Satellite telemetry, video tape, visual observations, and radio collars were used to determine the effects of exposure to noise by indirect measurement of the caribou's daily movements and activity levels. They observed that the usual response of the caribou to the jet overflights was a startle reflex (an activation of the sympathetic nervous system), which induced bolting and running. Harrington and Veitch noted that the startle response, although short-lived, did pose a threat during calving season by increasing the

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likelihood of: cow and calf separations, injuries to newborn calves (if the mother were to bolt) and stillbirths.

A study of the potential effects of helicopter noise on big horn sheep time budgets in the Grand Canyon by Berger et al. looked at if and/or how food intake might be impaired. They found that during the winter *Ovis canadensis nelsoni* were more sensitive to noise such that the sheep experienced a forty-three percent reduction in foraging efficiency. In the spring however, they found no significant effect in foraging efficiency. The disturbance threshold they calculated for big horn sheep in regards to helicopter altitude was 250-450 meters which lead them to hypothesize that the difference in disturbance between spring and winter was due to the migration to lower elevations in the spring which created a greater distance between them and the helicopter.

A 1996 study "Effects of Simulated Jet Aircraft Noise on Heart Rate and Behavior of Desert Ungulates," questioned the management objectives of public lands and the congruity of allowing military airspace to be underlain by National Parks and other wildlife refuges given the disturbances created by the noise of military aircraft. The purpose of the study was to determine the cardiac responses (immediate and long-term) of desert mule deer and bighorn sheep to simulated low-level aircraft noise and to establish whether or not the animals become habituated to such exposure.

During the summer, and late summer, desert mule deer exhibited a significant increase in heart rate one minute before an aircraft passed overhead and during the overpass, but no significant increase was detected beyond two to three minutes after the overflight. During the spring their heart rates were significantly elevated before, during, and up to three minutes following the overflight. Big horn sheep had significantly elevated heart rates at the time of the overflights and for three minutes after the aircraft passed during the two summer seasons, but during the spring a significant increase in heart rate was only observed during the direct overpass. For both deer and sheep the intensity and frequency of alerted and alarmed responses to aircraft was greater in the summer than in other seasons. This finding was consistent with past studies as was the finding that aircraft that generated louder noise caused greater elevations in heart rate.

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SECTION 3.6[5] - ENERGY

The "Draft Statewide Energy Technical Evaluation" only addressed the three system alternatives: the No Project alternative, Modal alternative, and the High-Speed Train alternative (proposed project). As indicated in the comments on air quality, the proposed project has several differing alignment alternatives.

Although traffic data was available in the "Transit, Circulation & Parking Technical Evaluation" for each of the route alignment options, the "Draft Statewide Energy Technical Evaluation" did not assess impacts for each route alignment of the proposed project. This section does not allow the reader to determine, in a comparative fashion, the impacts of one alignment when compared to another. As written, there is no way for the reader to come to any conclusion that one alignment is preferable to another.

For consistency purposes and to provide the reader with a breakdown of the energy impacts of each alignment, the section should be re-written to include a breakdown of the anticipated energy use for each of the potential alignments. The energy evaluation does not indicate which route alignment option it used in the analysis of the proposed project, thereby making the analysis meaningless, as it is likely that these different route options will produce differing energy impacts.

Clearly the impacts associated with the I-5 alignment would be far greater than the SR-58 alignment which is generally at-grade, yet the EIR/EIS does not make a clear distinction between the two alignments. Why is this distinction of impacts not called out in the EIR/EIS? At present, the Program EIR/EIS does not address all environmental impacts associated with each route alignment option in order for decision makers to assess the differences when making a decision on the proposed project, and must be revised to do so.

The "Draft Statewide Energy Technical Evaluation" only summarizes the analysis and does not contain information or data sets that would allow for a critical review of the analysis process or verify the quantitative results. The data sets and assumptions used in the energy analysis need to be presented in the "Draft Statewide Energy Technical Evaluation" or the Program EIR/EIS in order to provide public agencies and the public the ability to give meaningful comments on the adequacy and accuracy of the energy evaluation.

The Program EIR/EIS did not make a determination as to the significance of energy impacts. *CEQA Guidelines* Section 15126 requires that an EIR identify potentially significant environmental impacts associated with proposed projects. *CEQA Guidelines* Section 15064(b) requires that the lead agency make a determination of whether a project may have a significant effect on the environment based, to the extent

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possible, on scientific and factual data. This is an issue of significant concern, and it is important that the EIR/EIS address this issue fully and accurately in order to comply with CEQA.

The Program EIR/EIS presents mitigation strategies for energy conservation. These mitigation strategies are so vague as to be meaningless. As an example, on page 3.5-22 of the Program EIR/EIS one mitigation strategy listed is "Use energy-saving equipment and facilities to reduce electricity demand." While the Program EIR/EIS is a broad program-level analysis reviewing potential energy use statewide, mitigation strategies this broad are useless. The programmatic level analysis should identify regional impacts and find regional mitigation strategies designed to address those impacts. In this way, a program level analysis is able to take advantage of regional level mitigation that project-level analysis would not be capable of doing.

A conclusionary statement needs to be provided at the end of this section summarizing potential impacts for each of the alignments. Throughout the analysis text, the section concludes that there are potentially significant impacts associated with several of the alternatives but these conclusions are interwoven with analysis text in such a way that it is difficult for the reader to summarize which alternatives may have potentially significant impacts.

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SECTION 3.6 - ELECTROMAGNETIC FIELDS AND ELECTROMAGNETIC INTERFERENCE

For consistency purposes the electromagnetic fields (EMF) and electromagnetic interference section should provide an existing conditions section associated with each of the alignment alternatives. If the alternatives alignments are proposed to travel through residential areas that should be discussed, as along with the general distance between edge of right-of-way and the location of residential units. The EIR/EIS states: "The study area for EMF/EMI associated with operation of the alternatives is limited to potentially affected land uses and populations in the vicinity of the alternative corridors." This is inconsistent with the analysis undertaken in other sections of the EIR/EIS.

As an example, in the Land Use and Planning, Communities and Neighborhoods, Property and Environmental Justice section analysis of impacts "for highway corridors (under the No Project and Modal Alternatives), and for the proposed HST alternative alignments, land use compatibility was assessed using GIS layers (or aerial photographs where available) to identify proximity to housing and population, and to determine whether the alignments would be within or outside an existing right-of-way in the study area." If the conclusion regarding distance to the HST can be made in the Land Use section, this analysis must be undertaken in the electromagnetic fields (EMF) and electromagnetic interference sections also.

Each alignment must be discussed separately for a consistent analysis within all sections of the EIR/EIS. As a general point, the level of analysis appears to be more specific for certain subjects (e.g., Noise and Land use) and less specific for others (e.g., Electromagnetic Fields and Electromagnetic Interference). Engineering plans that are apparently available and have been used in conducting the impact analysis in some sections need to be used consistently throughout the entire EIR/EIS. To selectively choose the level of detail analysis from one section and another within the document is clearly contrary to the unbiased and impartial analysis required within by the *CEQA Guidelines*. All of the potential impacts within each section of the EIR must use the same detailed engineering plans when assessing and comparing alternative alignments in order to ascertain the real and true impacts associated with the project.

The Electromagnetic Fields (EMF) and Electromagnetic Interference section states that there are no standards for evaluating EMF impacts and that "[T]here is no evidence to substantiate a relationship between ELF electric fields and cancer." The section further concludes that there are no established adverse impacts associated with EMF exposures; yet, the EIR/EIS suggests mitigation measures to reduce impacts. If there are no impacts, why would mitigation measures be proposed? *CEQA Guidelines* Section 15126.4(a)(3) states: "Mitigation measures are not required for effects which are found not to be significant." *CEQA Guidelines* Section 15126.4(a)(1) requires that "[A]n EIR shall describe feasible measures which could minimize significant adverse impacts..." Therefore, if there are no significant

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adverse impacts, no mitigation need be proposed, which would seem to be the case with electromagnetic fields and electromagnetic interference associated with the proposed project.

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SECTION 3.7 - LAND USE AND PLANNING, COMMUNITIES AND NEIGHBORHOODS, PROPERTY, AND ENVIRONMENTAL JUSTICE

Land Use, Communities and Neighborhoods, and Property

The method of evaluation of land use compatibility and property impacts relies upon very broad and potentially imprecise assessments of land use types, density categories, and proximity to Modal and HST alignment alternatives. The definitions of low, medium, and high compatibility and property impact rankings are so highly generalized as to make them almost meaningless without some form of quantification (i.e., residential density, as in dwelling units per acre).

Although similar to the reliance upon regional and local general plans as a broad measure of compatibility, the method of evaluation used in this section does not conform specifically to the CEQA Guidelines Appendix G Land Use and Planning criteria, generally relied upon as the measures of land use and planning thresholds of impact significance. These criteria are:

- a) Physically divide an established community;
- b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; and
- c) Conflict with any applicable habitat conservation plan or natural community conservation plan.

Other than mentioning the general policies of many jurisdictions (unnamed) to promote transit and transit-oriented development, there is no meaningful discussion of local land use policies in this section. There is no mention of any specific plans or zoning designations anywhere in the section. For example, the planned I-5 rail alignment from Bakersfield to Los Angeles would travel directly through the Tejon Industrial Complex East Specific Plan area located south of the SR-99/I-5 split. The Kern County Board of Supervisors approved this project in January 2003, permitting approximately 15 million square feet of industrial, warehouse, and highway commercial development on approximately 1,100 acres. No mention of this specific plan is contained in the EIR/EIS.

Along with cities and counties, agencies with jurisdiction over the project would include state and federal agencies, such as the U.S. Forest Service, Department of Fish and Game, US Fish and Wildlife Service and Army Corps of Engineers. Certainly the alternative HST alignments, and the I-5/Tehachapi alignment in particular, should be discussed with regard to management plans, policies, or regulations of the Forest Service, where such alignments directly or indirectly affect national forest lands.

Similarly, impacts on lands included within habitat conservation plans should be addressed, or, if the analysis is included elsewhere, cross-referenced to other sections of the EIR/EIS where an adequate

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consideration of these issues is included. One such Habitat Conservation Plan involves land located in the Tehachapi Mountains where the US Fish and Wildlife Service and Tejon Ranch Company reached agreement on a recently noticed Habitat Conservation Plan for the California Condor. The analysis contained in the EIR/EIS provides no information or analysis on the potential effects of the alignment alternatives on this Habitat Conservation Plan.

As with other sections of the EIR/EIS, the shifting frame of reference related to the alternative alignments (e.g., SR-58/Soledad Canyon v. 'Antelope Valley'; I-5/Wheeler Ridge v. I-5/Tehachapi) and segments (e.g., Bakersfield to Los Angeles, Bakersfield to Sylmar) and segments within segments (e.g., Bakersfield to Los Angeles 'north,' 'central' and 'south'), makes it very difficult to ascertain whether comparable geographical areas are being addressed and evaluated in the presentation of data and impact ratings. For example, do references to the 'Antelope Valley' alignment consistently refer to the entire SR-58/Soledad Canyon alignment, or merely to that portion of the alignment that traverses the Antelope Valley?

Environmental Justice

Presidential Executive Order 12898, issued in February 1994, requires all federal agencies to analyze environmental justice impacts when proposing public projects. The analysis is intended to determine whether minority and low-income communities are unfairly burdened by project impacts, with the goal of using mitigation measures to create a level playing field. In 1999, Senate Bill 115 was passed making environmental justice a requirement of CEQA as well (PRC §.72000-72001). Despite the importance of this subject, the EIR/EIS was found to lack even the most elementary NEPA requirements for this topical issue. The specific concerns are identified below.

Chapter 8 of the EIR/EIS describes seventeen scoping meetings conducted in preparing the EIR/EIS. Scoping is a public process required by NEPA, which should be conducted as early as possible after a Lead Agency decides to prepare an EIS. The scoping process is designed to determine the scope of issues to be addressed in an EIS and is intended to be an open process, incorporating the views of other agencies, as well as the public, regarding the scope of an EIS. Environmental Justice issues are usually a major component of the scoping process. The EIR/EIS documents seventeen scoping meetings conducted at various locations along the proposed project alignments between April 25 and May 23, 2001, and identified the proposed project route options preferred by those attending the meetings. However, the EIR/EIS provides no indication of the specific environmental justice concerns or issues that were raised by those who were contacted or the details of what transpired during these meetings. The EIR/EIS needs to be expanded to include: (1) documentation of the specific meetings conducted during scoping process, (2) specific descriptions of the efforts made to gather information from low-income and minority communities; and (3) a table that identifies the specific concerns raised by each of these groups.

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The EIR/EIS did not address specific impacts in the discussion of environmental justice. Rather the discussion of environmental justice merely addressed whether or not minority or low-income populations were located in areas adjacent to the proposed project alignments. The discussion never indicates what type of impacts will be endured by these populations and whether or not the proposed action is likely to have disproportionately high and adverse health or environmental effects on minority or low-income populations.

"Environmental Justice Guidance Under the National Environmental Policy Act" published by the Council on Environmental Quality, Executive Office of the President requires that a determination needs to be made as to "whether a proposed action is likely to have disproportionately high and adverse human health or environmental effects on low-income populations, minority populations, or Indian tribes..." Implicit within this mandate is that adverse health and environmental effects are to be identified.

While the "Land Use and Planning Communities and Neighborhoods, Property, & Environmental Justice Technical Evaluation" briefly summarizes in tables whether or not low-income or minority populations exist along the various proposed project alignments, the evaluation does not indicate what types of adverse human health effects or environmental effects may occur and whether or not these effects disproportionately effect minority, low-income, or Indian tribe populations.

NEPA Guidelines (40 C.F.R. § 15022.22) requires that when information is incomplete or unavailable, the information must be obtained if costs are not exorbitant. All available data should be included, consistent with the mandate of NEPA. The Program EIR/EIS needs to be revised, and should document efforts made to obtain needed data. Where data is found to be unavailable or limited, the report should identify the cost associated with developing original data and indicate why such cost was determined to be exorbitant in the context of overall project costs.

It is difficult to see how the analysis and presentation of Environmental Justice issues in this section, both for the system alternatives and the HST alignment alternatives, meets the intent of Executive Order 12898, even at the program EIR/EIS level of review. Based on the information presented, it would not appear that these issues have been considered as required by EO 12898 "to the greatest extent practicable and permitted by law" in the EIR/EIS.

Specific Comments

The Table of Contents identifies this section of the EIR/EIS as "Section 3.7, Local Area Land Use, Communities and Neighborhoods, Development, Planning, Socioeconomics, and Environmental Justice," which differs from the title introducing this section.

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p. 3.7-1 (4th paragraph, 1st sentence): This sentence states, "[T]here are no specific state procedures prescribed for consideration of environmental justice issues related to the proposed HST system." There is no discussion on whether or not there are standards with regard to the modal alternative. For consistency purposes there must be discussion of any modal standards or a statement that there are no standards.

p. 3.7-5 (1st paragraph; 2nd to last sentence): The basis for the conclusion that the proposed HST system as a whole would not result in disproportionate impacts on minority and low-income populations is not explained here.

Figure 3.7-3, Existing Land Use-Bakersfield to Los Angeles. The regional scale and relatively indistinguishable pale colors make this exhibit almost useless as a tool in assessing or verifying land use compatibility impacts. What is the percentage of the alignment that is included in each land use category?

Figure 3.7-12, Potential Property Impacts Bakersfield to Los Angeles-HST Alternative. The regional scale of this exhibit makes it difficult to distinguish specific segments within each category (high, medium, low). In some instances, it appears as if two or three categories may be overlapping, although these cannot be clearly distinguished. What is the percentage of each alignment that is included in each land use category?

Table 3.7-1, Compatibility of Land Use Types. Multifamily residential is included under both 'medium compatibility' and 'high compatibility' categories. What explains this duplication?

p. 3.7-8 Bakersfield to Los Angeles. The 'three distinct sub-regions' referenced in this section—north, central, and south, are not clearly distinguishable based upon the descriptions here and at the top of page 3.7-9. Please indicate the limits of these sub-regions on one of the figures in the EIR/EIS. It should be noted that much of the central sub-region as it applies to the Antelope Valley alignment is not included in national forest, as described on these pages.

p. 3.7-11 A. Existing Conditions Compared to No Project Alternative. As the No Project Alternative described herein includes funded and programmed improvements, these improvements are presumably already known, and the impacts stemming from them could be discerned and generally described in this section, albeit at a program EIR level of detail. Therefore, this assessment would not be a speculative undertaking, as suggested here.

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p. 3.7-12 Environmental Justice (3rd sentence). As on page 3.7-5 previously, the basis for the conclusion that either the Modal or HST Alternatives as a whole would not result in disproportionate impacts on minority and low-income populations is not explained here.

Comparison of Alternatives by Region - C. Bakersfield to Los Angeles

Land Use Compatibility - High-Speed Train Alternative (p. 3.7-18). This indicates that "...most of the proposed alignment options in this region would be constructed outside of existing transportation right-of-way,..." What alignment options other than the Wheeler Ridge/I-5/Tehachapi, the Union Station/I-5/Tehachapi, and SR-58/Antelope Valley/Soledad Canyon proposed options is this statement referring to?

p. 3.7-19. It is noted here that the I-5 Tehachapi Mountain potential cut and fill crossing near Tejon Lake in Castaic Valley may be in conflict with Tejon Ranch plans to build a low density residential village near Tejon Lake. Therefore, given the assumption made in the section, a conclusion should be made that that this alignment would be inconsistent with proposed development plans. Consideration must also be given to the approved Tejon Industrial Complex East Specific Plan located at the Laval Road interchange, which is also bisected by this proposed rail alignment.

Property-HST Alternative. Verification of the property impacts described in this section is difficult without clear mapping that illustrates those segments of each alignment that are included in the very broad, and potentially overlapping seven development-type categories included in prior Table 3.7-2 (i.e., Rural/Suburban, Suburban/Rural, Urban, Rural Developed, Suburban Industrial/Commercial, Urban Business Parks/Regional Commercial, Rural Non-developed). Mapping of this data layer at a suitable scale is needed to be able to independently confirm the mileages, percentages of alignment and impact ratings associated with each alignment in this discussion and on Figure 3.7-12. In viewing this figure, it would appear the percentage of alignment included within the 'high' property impact category for the Union Avenue/I-5 alignment is approximately the same or higher than the corresponding percentage for the SR-58/Soledad Canyon (Antelope Valley) alignment.

Environmental Justice - HST Alternative and Alignment Options Comparison (p.3.7-20). The shifting and confusing references to segments or portions of segments in these passages make it very difficult to understand the relative impacts of the basic alignment alternatives on minority populations. The reference to the proposed I-5 (Union Avenue and Wheeler Ridge) options as being potentially more compatible with existing land use than the SR-58 option (SR-58 only or entire SR-58/Soledad Canyon alignment?), would appear to be in conflict with conclusions reached for Union Avenue/I-5 under land use compatibility, communities and neighborhoods, and property impacts.

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3.7 Land Use and Planning, Communities and Neighborhoods, Property, and Environmental Justice

Mitigation Strategies

Land Use Compatibility. This brief statement merely addresses the scope of the subsequent review process in alignment and station location selection, but says nothing about strategies to mitigate land use impacts.

Environmental Justice. No justification or explanation is provided for the conclusionary statement that the HST system would not result in disproportionate adverse effects to minority or low-income populations.

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cont.

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cont.

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